

Application No.: 10/501,598
Docket No.: AD6856 USPCT

Page 2

Remarks

Traversal

The Examiner provisionally rejects Claims 1 and 14 under the doctrine of obviousness type double patenting. The Applicants take note of said rejection, but will defer traversal until such time as said provisional rejections become effective. The Applicants do note, however, that the provisional rejection of Claim 14 of the present invention over Claim 1 of the co-pending application is flawed inasmuch as there is no actual overlap between the plasticizer amounts. As noted by the Examiner on page 3, paragraph 3 the present office action, Claim 1 of the co-pending application claims less than 30 pph of plasticizer while the present application calls for 30 to 50 pph plasticizer.

The Examiner rejects Claims 1-5, 8, 14-19, and 23 under 35 USC §103(a) as obvious over Gutweiler (US '842) in view of Dauvergne and further in view of Shohi (EP '775). The Examiner contends that US '842 teaches an optical brightener in an amount effective to improve the optical properties and reduce yellowing, Dauvergne teaches the use of a surfactant and adjustment on the pH to 9-11, and EP '775 teaches a wash step and a neutralization step. The Examiner concludes that the cited art teaches or makes obvious the presently claimed invention.

The Applicants respectfully disagree with the Examiner's conclusion for the following reasons.

First, it may be beneficial to the Examiner for the Applicants to explain the role of the surfactant and/or bleaching compound in the present invention. Without being held to theory, the Applicants believe that yellow color can develop in PVB as a result of degradation and/or oxidation products that can be present in PVB. It is the Applicants' belief that use of a bleaching compound can reduce the concentration of the color-forming bodies in the PVB and thereby result in a low color product. It is also a key feature of the Applicants' invention that the PVB composition include either (a) a surfactant that can act as a bleaching

Application No.: 10/501,598
Docket No.: AD6856 USPCT

Page 3

compound, or break down during normal processing to provide a bleaching compound and/or (b) a surfactant that is not a bleaching compound and a bleaching compound that is separate and distinct from the surfactant. The bleaching compound is optional in the present invention if the surfactant can act as described in (a), above.

While the Examiner has appropriately identified that the key objective of the present invention is to obtain a low color sheet and that US '842 proposes an optical brightener for this very purpose, the Examiner has inappropriately made a correlation between the optical brightener and the surfactant/bleaching compound of the present invention. The Examiner will note that at Column 2, lines 50 - 65, US '842 describes how an optical brightener works to reduce the appearance of yellow in a PVB sheet. The Examiner will note that the brightener does not actually reduce the yellowness, it only reduces the perception of yellow. This is done by flooding the observer's eye with bright blue light which overwhelms the yellow. Contrary to this process, the surfactant and/or bleaching compound of the present invention actually reduces the concentration of the component that is responsible for producing the yellow color. It is the Applicants' contention that one of ordinary skill in the art would not find the Applicants' process obvious in view of the combined references. There is no suggestion of a bleaching process to be found in any of the cited references.

The Applicants contend that the composition of the PVB described in US '842 and the process of manufacture taught by the combination of references is not the same as the Applicants' for additional reasons. In addition to the lack of a bleaching compound or surfactant in '842, the Examiner points to the other distinction at Column 3, liner 41 - 43. US '842 specifically states that the PVB has a vinyl alcohol monomer content of 17 to 29 wt%. The presently claimed invention does not require vinyl alcohol monomer. PVB of the present invention is obtained from the reaction of polyvinyl alcohol with butyraldehyde. Vinyl alcohol monomer is not typically

Application No.: 10/501,598
Docket No.: AD6856 USPCT

Page 4

used in the presently claimed invention. The hydroxyl number is a measure of the unreacted hydroxyl groups on the PVB (that is, a result of a stoichiometric deficiency of butyraldehyde and therefore an incomplete reaction of butyraldehyde with the hydroxyls of polyvinyl alcohol).

The Examiner has combined references in a way that the Examiner believes provides the teaching to allow one of ordinary skill in the art to obtain the Applicants' invention. However, the Applicants contend that there is no suggestion in the cited references to combine the art in the manner suggested by the Examiner. US '842 deals with the problem of yellowing of PVB. EP '775 deals with the problem of PVB having "high moisture resistance and small vapor emanation" (Paragraph 0001). Given the Applicants' goal of providing a process for producing a low color PVB sheet, there would be no motivation to combine US '842 with the other cited references in the manner suggested by the Examiner. The Examiner cites the motivation of the benefit of an additional washing step, as described in EP '775, but there is no suggestion in EP '775 or in US '842 that such a step would benefit one seeking to reduce the yellowing of PVB. As such, the combination by the Examiner seems to be hindsight reconstruction of the Applicants' invention using the Applicants' invention as a blueprint. The courts have consistently ruled that such hindsight reconstruction is not a permissible practice in a finding of obviousness.

The Examiner uses an inherency argument to conclude that the composition of the prior art inherently anticipates the glass transition temperature (T_g) of the presently claimed invention. An inherency argument is used when, for example, a property or characteristic is considered to naturally result from that composition. It is a reasonable conclusion that identical compositions can be expected to have identical properties or characteristics, and the courts have therefore ruled that it may not be necessary to show by experimentation that two identical compositions have the same properties. However, as applied herein, the Applicants respectfully

Application No.: 10/501,598
Docket No.: AD6856 USPCT

Page 5

disagree with this argument since it has not been shown that following the process of any one of the references would naturally result in the Applicants' claimed invention. In fact, the Examiner is using a combination of references -- not a single anticipatory reference -- to attempt to demonstrate that the teachings of the prior art make the present invention obvious. As stated above, the Applicants do not agree with the Examiner's conclusions on obviousness. However, it is much more tenuous to conclude that the composition of the present invention is necessarily obtained by following the combined teachings of the cited references. In fact, the contrary can readily be shown. First, US '842 requires 17 to 29 wt% vinyl alcohol monomer, and there is no such requirement for vinyl alcohol monomer in the presently claimed invention. Second, US '842 requires the presence of an optical brightener, and the present invention does not require said brightener. Third, EP '775 includes a neutralization step with HCl, which would necessarily produce a chloride salt which apparently remains within the final product. This neutralization step is not required and not described in the Applicants' process, and thus the salt is not a necessary by-product of the Applicants' process. Each of these differences is readily discernable from the cited art without further experimentation, and only one of these differences is sufficient to disprove the inherency argument. Therefore the Applicants contend that the Applicants have met the burden of showing that the T_g property is not inherent in the teachings of the cited art.

The Applicants contend that the arguments presented are applicable to rebut the rejections of Claims 1-5, 8, 14-19, and 23 based on the cited art referenced hereinabove.

The Examiner rejects Claims 6-7, 9-13, and 20-21 under §103 as obvious over US '842 in view of Dauvergne and further in view of EP '775 and Degeilh (US '971). The Examiner relies on the prior arguments with regard to the previously cited art. Additionally, the Examiner states that US '971 teaches the use of DOSS.

Application No.: 10/501,598
Docket No.: AD6856 USPCT

Page 6

The Applicants respectfully disagree with the Examiner's reasons for rejection. For the same reasons as outlined hereinabove, the Applicants do not agree that the three previously combined references make the Applicants' invention obvious. The Applicants do not agree that US '971 cures the arguments presented by the Examiner with regard to this set of claims. Most notably, the process claims of the present invention are in direct contradiction to the process taught by US '971. At Column 2, lines 57-68, and continuing to column 3, lines 1 to 15, the process for preparing the PVB of used therein is described. In that process, the pH of the reaction mixture is not allowed to go higher than pH 5 on neutralization. This is in direct contradiction to the presently claimed invention (see Claim 1).

Not only is the Applicants' invention not obtained, but US '971 teaches away from the Applicants' claimed invention. The reference must be used for all that it teaches, not merely for those elements that support the Examiner's argument. The different pH's cited in the respective processes would certainly lead one of ordinary skill in the art to expect different results (and in fact, this lower pH limit is represented in US '971 as an improvement in the process of a prior art patent). As to the inherency argument presented by the Examiner, the Applicants respectfully disagree that the DOSS added as a surfactant in US '971 would perform in the same manner as described in the present application. First, the reaction conditions (for example, pH) are quite different in the two processes, and the pH of the mixture can be important in how the species interact (otherwise there would be no reason to change pH during either process).

Further, it is a part of the Applicants' process that DOSS, when used, remains in the PVB composition and is not "completely removed", as in US '971 (see Column 3, lines 16-24). Again, US '971 teaches away from the Applicants' claimed invention. DOSS is a surfactant that also acts as a bleaching compound in the practice of the present invention, and as such it remains with the PVB composition as a bleaching component.

Application No.: 10/501,598
Docket No.: AD6856 USPCT

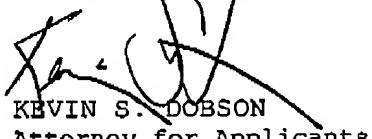
Page 7

during the extrusion process. These benefits are not disclosed or suggested in any of the cited references, and thus the Applicants respectfully contend that the presently claimed invention is not made obvious in view of the combined references.

The Applicants' arguments can be applied in the same manner for rejection of Claim 22. The Applicants contend that the cited references do not teach or suggest the presently claimed invention in any of its Claimed forms.

The Applicants respectfully request that the Examiner reconsider the rejection of the Claims based on the reasons cited above. Instead, the Applicants respectfully petition the Examiner to instead issue a Notice of Allowability for the pending Claims 1-23 in the present application.

Respectfully submitted,



KEVIN S. DOBSON
Attorney for Applicants
Registration No. 40,296
Telephone: 302-892-5526
Facsimile: 302-992-3257

KSD:ms

Dated: December 27, 2005